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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/544,159

03/13/2006

Peter Stauss

5367-191PUS

8419

27799

7590

12/17/2008

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/544,159	<b>Applicant(s)</b> STAUSS ET AL.	
	<b>Examiner</b> Howard Weiss	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8.18.2008</u>   | 6) <input type="checkbox"/> Other: _____                          |

Attorney's Docket Number: 5367-191PUS

Filing Date: 3/13/2006

Continuing Data: 371 of PCT/DE04/00121 (01/27/2004)

Claimed Foreign Priority Date: 01/31/2003 (DEX)

Applicant(s): Stauss et al. (Ploessl)

Examiner: Howard Weiss

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1 to 14 and 16 to 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (U.S. Patent No. 6,287,882) and Yonehara et al. (U.S. Patent No. 5,453,394).

Chang et al. shows most of the instant invention (e.g. Figures 4 and Column 4 lines 4 to 46) including

- an optoelectronic semiconductor component being a LED or laser LED or a thin-film luminescence diode

- soldering a multilayered TFS body **41** to a carrier **44** with gold-containing solder
- the TFS body comprising one of In AlGaN, InAsGaP or InGaAsN
- mirror layer **43** located between said TFS body and the carrier

Chang et al. do not show the carrier to be made of germanium (Ge) and a dielectric layer arranged between the TFS and mirror layer. Yonehara et al. teach (Column 7 Lines 3 to 7) that Ge is an equivalent carrier material known in the art and to form a dielectric layer **307** between the TFS and mirror layer to improve the devices electronic characteristics with high productivity (Column 3 Lines 64 to 67). Therefore, because these carrier materials were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to use Ge for carrier material. Additionally and with respect to the dielectric layer at least partially arranged between said TFS body and said mirror layer, these material uses are well known to one of ordinary skill in the art and since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of invention. See Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonehara et al. and Kelly et al. (U.S. Patent No. 6,740,604).

Yonehara et al. show most aspects of the instant invention (Paragraph 8) except for the use of laser irradiation to strip the TFS body from the carrier. Kelly et al. teach (e.g. Figure 7) to use laser irradiation **1** to prevent the destruction of the surface of the semiconductor layer (Column 2 Lines 60 to 67). It would have been obvious to a person of ordinary skill in the art at the time of invention to use laser irradiation as taught by Kelly et al. in the process of Yonehara et al. to prevent the destruction of the surface of the semiconductor layer.

***Response to Arguments***

4. Applicant's arguments filed 9/12/2008 have been fully considered but they are not persuasive. The Applicants state that one of ordinary skill in the art would not combine the prior art since Yonehara et al. is concerned with SOI structures which would not be compatible with the optoelectic device of Chang et al. and that Ge would not be considered since Chang et al. indicate a material with high thermal conductivity. In reference to the combination of an SOI structure interfering with the operation of an optoelectric device, this is an incorrect characterization of the state of the art. Numerous references (for example see Soref, U.S. Patent No. 5,838,870) and McCarthy, U.S. Patent No. 5,674,758) state the desirability to utilize SOI platforms with optoelectronic integrated circuits and give examples of such arrangements.

In reference to the use of high thermal conductivity materials, the list of materials given in Chang et al. have a wide range of thermal conductivities. In addition to the (relatively) high thermal conductivities of Si (150 W/mK)) and SiC (490 W/mK), other lower values are given such as AlN (30 W/mK), quartz (~12 W/mK) and glass (~1 W/mK). Ge value is well within the acceptable range of values and could be substituted by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of invention.

In response to applicant's arguments against the references (i.e. Kelly et al.) individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is the combination of the use of lasers by Kelly et al. with the optoelectronic device of Chang et al. and Yonehara et al. that render the instant invention obvious. In view of these reasons and those set forth in the present office action, the rejections of the stated claims stand.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via [Howard.Weiss@uspto.gov](mailto:Howard.Weiss@uspto.gov). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.
8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

9. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 98; 438/ 455, 458, 933	thru 12/12/2008
Other Documentation: none	
Electronic Database(s): EAST	thru 12/12/2008

HW/hw  
17 December 2008

/Howard Weiss/  
Primary Examiner  
Art Unit 2814